Third West Weekly Report
Shepherd, Michael
to:
Joyce Ackerman, 'Craig Barnitz (cbamitz@utah.gov)'
12/28/2011 08:29 AM
Hide Details
From: "Shepherd, Michael" <Michael.Shepherd@PacifiCorp.com>

To: Joyce Ackerman/R8/USEPA/US@EPA, "'Craig Barnitz (cbamitz@utah.gov)'" <cbamitz@utah.gov>

6 Attachments

Weekly Report 12-19 to 12-22.pdf Third West Weekly Log - 2011-51.pdf 226406-1.pdf 226479-1.pdf 226568-1.pdf

226620-1.pdf

Joyce & Craig,

Attached are the reports for the week of December 19, 2011.

All air monitoring results came back negative, except the two positive hits of chrysotile on Thursday last week.

The site was not active on Friday or Saturday, thus there are no reports for those days. Please let me know if you have any questions.

Thanks,

Mike Shepherd
Project Manager
Rocky Mountain Power - Major Projects
801.220.4584 Office
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PACIFICORP

R & R ENVIRONMENTAL, INC.

3RR WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

DATE: 12/19/11

General

☑ Work area Health and Safety Inspection

NA Review and if necessary update Activity Hazard Analyses (AHA) based on planned site activities for the day

NA Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP

NA Site hazard and safety instruction for all first time employees, contractors or visitors

NA Complete Employee Meeting Record Form B (where applicable)

NA Document required Respirator Training completion with Form H

NA Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.

NA Confirm return of waste material manifest documents for each load with site manager.

NA Complete all CSHASP Forms (for applicable activities planned for that day)

- NA Illness/Injury Report Form A
- NA Site-Specific Training Record Form C
- NA Hot Work Permit Form D
- NA Trench/Evacuation Permit Form E
- NA Combined Space Entry Permit From F
- ☑ Exclusion zone operations are practiced as instructed.
  - ☑ Decontamination unit is working properly.
  - ☑ Workers are using decontamination unit as instructed.
  - ☑ Workers use personal protective equipment properly.

☑ Set air samples at cardinal compass points around exclusion zone. Check throughout the day to ensure proper operation.

NA Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention.

☑ Review sign-in/sign-out log throughout and at the end of the workday.

☑ Secure the site at the end of the workday

Sampling

NA Soil Confirmation sampling for any newly excavated areas

NA Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusions zone

NA Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal

NA Digitally photograph each sample location and at any place field sampling personnel determined necessary

NA Electronically file photo files into the on-site database

☑ Complete Field Documentation
- ☑ Field Sample Data Sheets (FSDS)
- ☑ Logbook
- NA On-site computer database

☑ Label each sample media with a unique number

☑ Seal sample(s) in zip lock plastic bags

☑ Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory

☑ Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples

☑ Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees

☑ Electronically file sample reports into on-site database

PACIFICORP
A MIDAMERICAN ENERGY HOLDINGS COMPANY

3rd West Substation Site Project Safety Audit

Project: 3rd West Sub Station **Date:** 12/19/11

Location: 3rd West, 1st South, SLC **Job Number:**

Survey Conducted By: Justin Kargis **Title:**

Standard	*Title*	In Compliance ☐	Out of Compliance ☐	N/A ☐	*Corrective Action Taken and Date*
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			x	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			x	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

Standard	*Title*	In Compliance ☐	Out of Compliance ☐	N/A ☐	*Corrective Action Taken and Date*
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			x	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	x			
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	x			

Standard	*Title*	In Compliance ☐	Out of Compliance ☐	N/A ☐	*Corrective Action Taken and Date*
1926.451 (a) (4)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			x	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			x	
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a) (9)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	

Standard	*Title*	In Compliance ☐	Out of Compliance ☐	N/A ☐	*Corrective Action Taken and Date*
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			X	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.	x			
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f) (7)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			x	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	

Standard	*Title*	In Compliance ☐	Out of Compliance ☐	N/A ☐	*Corrective Action Taken and Date*
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	x			
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.	x			
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

Comments:

Newman drove water truck into exclusion zone at around 7:30 and started excavation before 8:00. Backing dump trucks with pups into the north gate is requiring some traffic direction. R&R and CVE helping with this on 1st south.

Truck #92 loaded, washed and exited around 10:20.

Truck #91 washed out around 11:00

Newman side dump washed out around 12:30

Truck #92 washed out around 14:40

Truck #91 washed out around 15:20

Craig Barnet (sp?) on site at around 16:00 to check up on progress. Had a few questions about how long EZ would be up.

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R & R ENVIRONMENTAL, INC.

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☑ Review sign-in/sign-out log throughout and at the end of the workday.

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NA Electronically file photo files into the on-site database

☑ Complete Field Documentation
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Standard	*Title*	In Compliance ☐	Out of Compliance ☐	N/A ☐	*Corrective Action Taken and Date*
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			x	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			x	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

Standard	*Title*	In Compliance ☐	Out of Compliance ☐	N/A ☐	*Corrective Action Taken and Date*
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			x	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	x			
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
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1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			x	
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a) (9)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	

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1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.	x			
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
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1926.404 (f) (7)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
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Comments:

Newman began EZ work around 8:00.

Newman side dump washed out around 9:45

Truck #92 washed out around 11:10

Truck #91 washed out around 12:15

CVE poured part of the wall for the switch gear building and breaker pad porches (around 12 yards).

Air monitoring around the exclusion zone conducted through work activities.

PACIFICORP

R & R ENVIRONMENTAL, INC.

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Comments:

Newman began EZ work around 8:00.

Bi-weekly team meeting conducted are 9:00. Discussed holding another HAZWOPER training class in January. CVE and Newman to discuss and get back to RMP and R&R on scheduling.

Scott Collard on site to check in on progress.

CVE pulled forms from switch gear building walls and continued working on foundation forms.

Newman side dump washed out around 14:15.

PACIFICORP

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General

- ☑ Work area Health and Safety Inspection
- NA Review and if necessary update Activity Hazard Analyses (AHA) based on planned site activities for the day
- NA Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
- NA Site hazard and safety instruction for all first time employees, contractors or visitors
- NA Complete Employee Meeting Record Form B (where applicable
- NA Document required Respirator Training completion with Form H
- NA Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
- NA Confirm return of waste material manifest documents for each load with site manager.
- NA Complete all CSHASP Forms (for applicable activities planned for that day)
  - NA Illness/Injury Report Form A
  - NA Site-Specific Training Record Form C
  - NA Hot Work Permit Form D
  - NA Trench/Evacuation Permit Form E
  - NA Combined Space Entry Permit From F
- ☑ Exclusion zone operations are practiced as instructed.
  - ☑ Decontamination unit is working properly.
  - ☑ Workers are using decontamination unit as instructed.
  - ☑ Workers use personal protective equipment properly.

- ☑ Set air samples at cardinal compass points around exclusion zone. Check throughout the day to ensure proper operation.
- ☑ Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention.
- ☑ Review sign-in/sign-out log throughout and at the end of the workday.
- ☑ Secure the site at the end of the workday

Sampling

- NA Soil Confirmation sampling for any newly excavated areas
- ☑ Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusions zone
- NA Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
- NA Digitally photograph each sample location and at any place field sampling personnel determined necessary
- ☑ Electronically file photo files into the on-site database

☑	Complete Field Documentation
☑	Field Sample Data Sheets (FSDS)
☑	Logbook
NA	On-site computer database
☑	Label each sample media with a unique number
☑	Seal sample(s) in zip lock plastic bags
☑	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
☑	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
NA	Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
NA	Electronically file sample reports into on-site database

PACIFICORP
A MIDAMERICAN ENERGY HOLDINGS COMPANY

3rd West Substation Site Project Safety Audit

Project: 3rd West Sub Station **Date:** 12/22/11

Location: 3rd West, 1st South, SLC **Job Number:**

Survey Conducted By: Justin Kargis **Title:**

Standard	*Title*	In Compliance ☐	Out of Compliance ☐	N/A ☐	*Corrective Action Taken and Date*
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.			x	
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			x	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toeboards shall be installed.			x	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

Standard	*Title*	In Compliance ☐	Out of Compliance ☐	N/A ☐	*Corrective Action Taken and Date*
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			x	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	x			
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toeboards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.			x	

Standard	Title	In Compliance ☐	Out of Compliance ☐	N/A ☐	Corrective Action Taken and Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toeboards when more than 10 feet high and when less than 45 inches of work space.			x	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.			x	
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			x	
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.			x	
1926.350 (a) (9)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	

Standard	*Title*	In Compliance ☐	Out of Compliance ☐	N/A ☐	*Corrective Action Taken and Date*
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			X	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.			x	
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.			x	
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f) (7)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer of the tool is double insulated.			x	
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			x	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	

Standard	Title	In Compliance ☐	Out of Compliance ☐	N/A ☐	Corrective Action Taken and Date
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			x	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

Comments:

No CVE fabricating crew today.

Newman worked on breaking and piling concrete throughout the day. Neil had to temporarily alter the exclusion zone to accommodate for an electrical panel delivery to the control building. Wall north of the decontamination unit was moved across to the corner of the artistic printing building, opening up the north driveway area and closing off the EZ on the north side.

Newman side dump washed out around 16:00.

R&R suited up and entered the EZ to observe excavations and inspect a concrete wall where a saw cut will be done 12/27. Observed presence of vermiculite throughout the excavated soil and concrete.

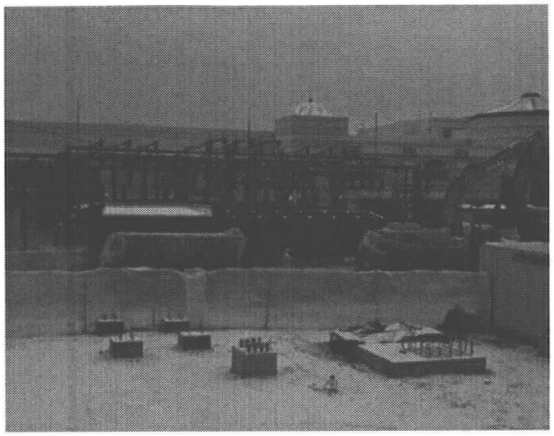


PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR
DRAWN BY: JMK	DATE 12/19/2011	FILE:

SITE PHOTOGRAPHS

PACIFICORP
A MIDAMERICAN ENERGY HOLDINGS COMPANY

3rd West Substation
"2011 Upgrade Project"
Salt Lake City, Utah

PHOTO 1

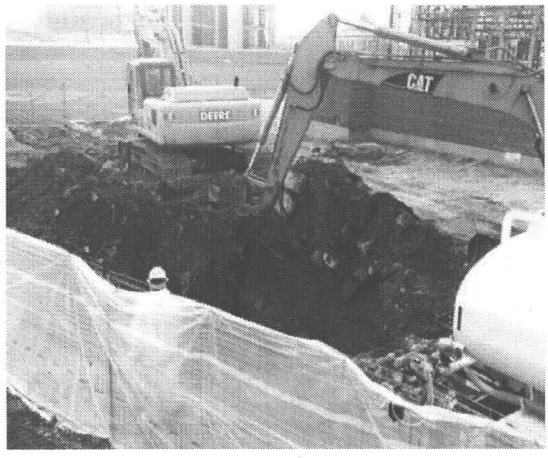


PHOTO 2

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR
DRAWN BY: JMK	DATE 12/19/2011	FILE:

SITE PHOTOGRAPHS

PACIFICORP
A MIDAMERICAN ENERGY HOLDINGS COMPANY

3rd West Substation
"2011 Upgrade Project"
Salt Lake City, Utah

PHOTO 1

PHOTO 2

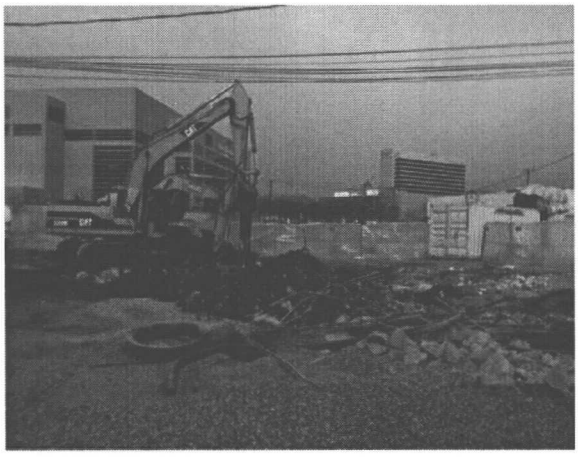


PHOTO 3

PHOTO 4

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

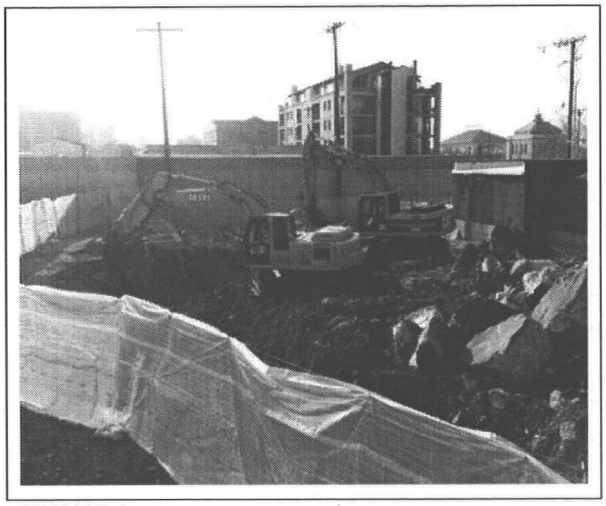
PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR
DRAWN BY: JMK	DATE 12/20/2011	FILE:

SITE PHOTOGRAPHS

PACIFICORP
A MIDAMERICAN ENERGY HOLDINGS COMPANY

3rd West Substation
"2011 Upgrade Project"
Salt Lake City, Utah



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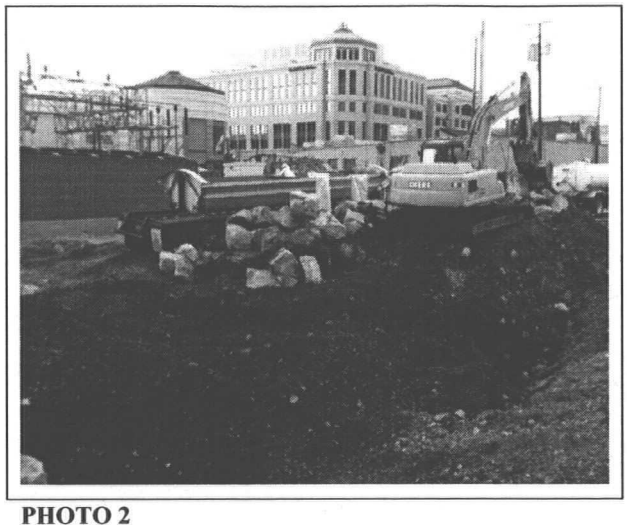
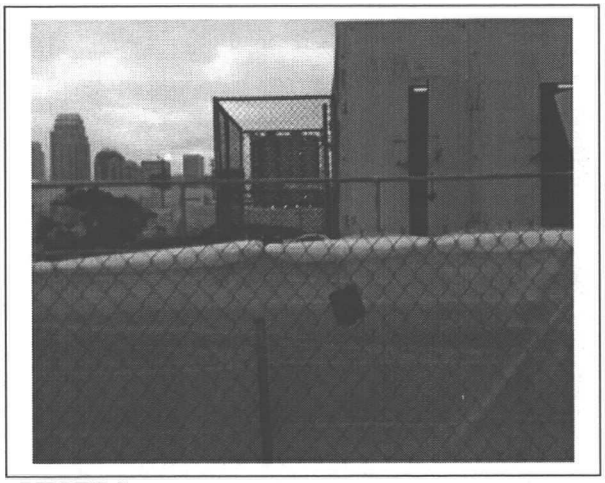


PHOTO 2



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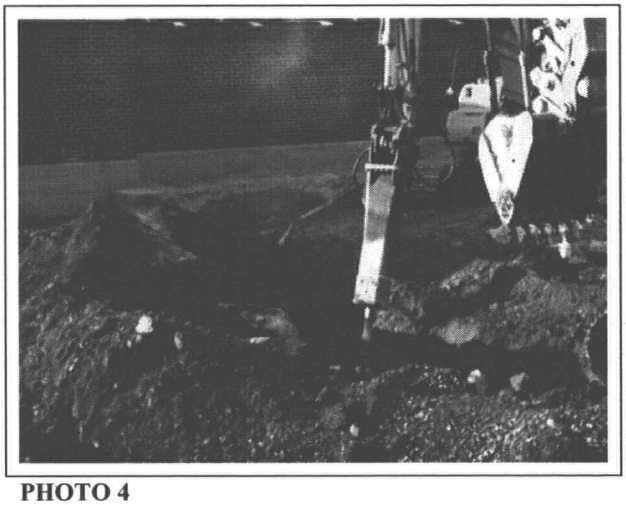

PHOTO 4

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR
DRAWN BY: JMK	DATE 12/21/2011	FILE:

SITE PHOTOGRAPHS

PACIFICORP
A MIDAMERICAN ENERGY HOLDINGS COMPANY

3rd West Substation
"2011 Upgrade Project"
Salt Lake City, Utah

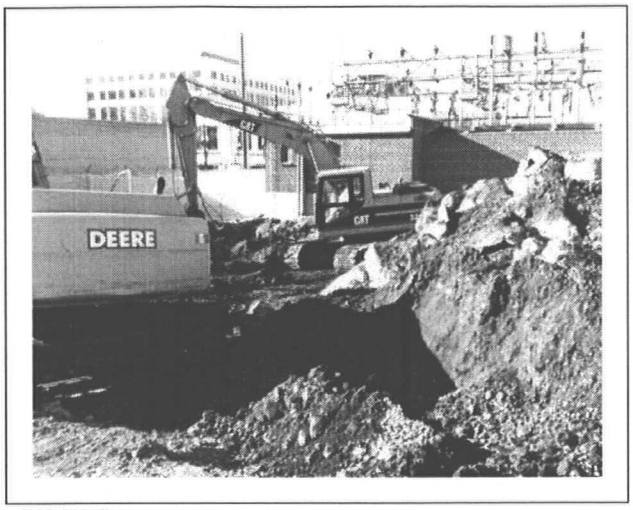

PHOTO 1

PHOTO 2

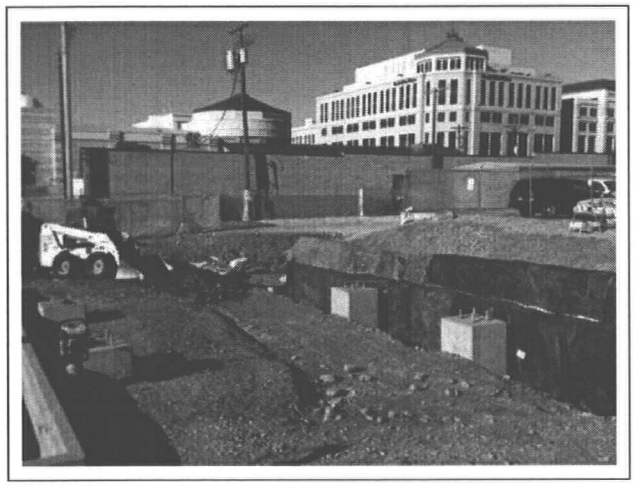

PHOTO 3

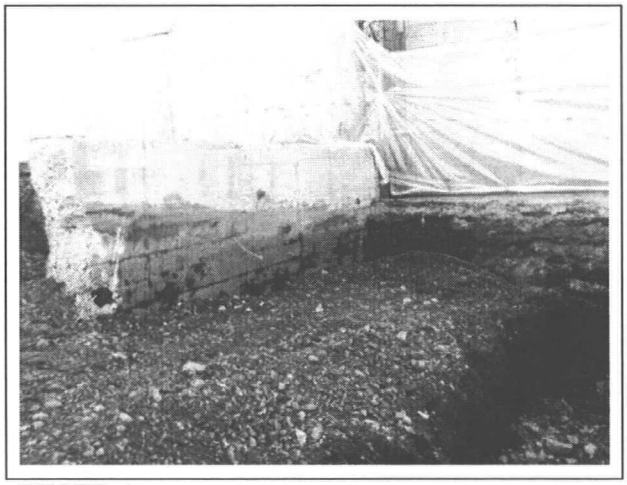

PHOTO 4

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY: DCR
DRAWN BY: JMK	DATE: 12-22-11	FILE:

SITE PHOTOGRAPHS

PACIFICORP
A MIDAMERICAN ENERGY HOLDINGS COMPANY

3rd West Substation
"2011 Upgrade Project"
Salt Lake City, Utah

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME: Third West Sub - Rebuild **DATE :** Monday, December 19, 2011

PO & Work Order NO. : 3000078050 / 10035803 **MAIN CONTRACTOR :** Cache Valley Electric

Crew Start Time:	6:55	**Crew Stop Time:**	17:15	**Tot Hrs mns:**	10:20
FCR Start Time:	6:40	**FCR Stop Time:**	18:00	**Tot Hrs mns:**	11:20

Use military time format 00:00

WEATHER CONDITIONS: Light Snow, 28 degrees in AM, 25 degrees in the PM

DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.)

R&R set up four monitors. We will be fabricating block outs in the walls of the switchgear to accommodate the exiting 6" runs for the 12 kV cables. After talking with Brent Wiggins we will follow the example shown for the block out in the new control building and will redline as appropriate. CVE fab crew is working on the walls (rebar, blockouts, etc.) for the east switchgear section. Anticipate a pour of the east wall section at 10:00 AM on Tuesday. The EZ is activated and Newman is loading out trucks with concrete, rebar, dirt and misc. debris, hauling the material to Clean Harbors. Newman loaded out 5 truck/trailer loads today, one Newman truck (side-dump) and four Miller trucks (tmck and pup). Craig Bamett, UDEQ came by around 4:00 PM to see what was going on and what our schedule for the next two weeks will be. He indicates that he probably won't be back to the site until after the first of the new year. CVE fab crew = 6, Newman =4, R&R = 1, Dustin Miller Trucking = 2, Wilding = 1.

IF WORKING IN ENERGIZED SUBSTATION:

Dispatcher login, name and time:	Gus Montanez 0640
Dispatcher logout, name and time:	Jim 1800

DISCREPANCIES:	**IMMEDIATE CORRECTIVE ACTION TAKEN:**
11/22 - We found two fdns in the old sub that were under the yard rock and not included in the details of concrete to be removed from the site	CVE to provide CO for removing the additonal concrete.
11/16 - No resolution on the 20' ground rod issue.	CVE to provide per unit price to drill concrete.
11/30 - Identified an additional retaining wall that is below grade and does not show on the Demo Plan.	Will excavate to determine dimensions.
12/14 - Communications battery rack extends into the northeast doorway. Capital Electric indicates that they were told to proceed with the install by Barry Andersor	Sent email and pictures to Roger F to confirm that this conflict is acceptable to RMP. Under evaluation by Comm Group
12/15 - Excavated to locate the 46 kV cables exiting the west side of the yard. Dug 8' and didn't find them. Will try again. Actual depth will be much deeper than design of new bank	Sent e-mail to Roger F.

DELAYS OR LOST TIME ENCOUNTERED:

EQUIPMENT (working, delivered, idle):

CVE fab crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex , exclusion zone conex (2), tool trailer, crew truck, boom truck (2). Newman: portable wash-down structure, trachoe (2), mini-ex, bobcat, power washer, water truck, compactor, backhoe.

OSHA Recordable Safety Incidents:	**Reported by:**	**Time:**

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Russ Johnson
Field Construction Representative

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME: Third West Sub - Rebuild **DATE :** Tuesday, December 20, 2011

PO & Work Order NO. : 3000078050 / 10035803 **MAIN CONTRACTOR :** Cache Valley Electric

Crew Start Time:	6:55	Crew Stop Time:	17:00	Tot Hrs mns:	10:05
FCR Start Time:	6:45	FCR Stop Time:	17:20	Tot Hrs mns:	10:35

Use military time format 00:00

WEATHER CONDITIONS: Overcast, 25 degrees in AM, 30 degrees in the PM

DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.)

R&R set up four monitors. Newman is hauling spoils (concrete and dirt) to Clean Harbors. They anticipated three trucks, making a total of five loads today. One Newman truck was loaded first, followed by two Miller trucks. Newman spent time in between loading trucks, breakin up concrete. A total of three loads were sent to Clean Harbors today. CVE fab crew continues to prep the east switchgear walls for a pour today. Pour was started at 10:00 AM and they poured the east one-third of the switchgear walls, plus the "porches" for the two east circuit breaker foundations. The air test came in at 6.7% and the slump was right at 6". CVE fab crew = 6, Newman =4, R&R = 1, Dustin Miller Trucking = 2, Wilding = 1.

IF WORKING IN ENERGIZED SUBSTATION:

Dispatcher login, name and time:	Gus Montanez 0645
Dispatcher logout, name and time:	Manny LuHaun 1720

DISCREPANCIES:	IMMEDIATE CORRECTIVE ACTION TAKEN:
11/22 - We found two fdns in the old sub that were under the yard rock and not included in the details of concrete to be removed from the site	CVE to provide CO for removing the additonal concrete.
11/16 - No resolution on the 20' ground rod issue.	CVE to provide per unit price to drill concrete.
11/30 - Identified an additional retaining wall that is below grade and does not show on the Demo Plan.	Will excavate to determine dimensions.
12/14 - Communications battery rack extends into the northeast doorway. Capital Electric indicates that they were told to proceed with the install by Barry Andersor	Sent email and pictures to Roger F to confirm that this conflict is acceptable to RMP. Under evaluation by Comm Group
12/15 - Excavated to locate the 46 kV cables exiting the west side ot the yard. Dug 8' and didn't find them. Will try again. Actual depth will be much deeper than design of new bank	Sent e-mail to Roger F.

DELAYS OR LOST TIME ENCOUNTERED:

EQUIPMENT (working, delivered, idle):

CVE fab crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex , exclusion zone conex (2), tool trailer, crew truck, boom truck (2). Newman: portable wash-down structure, trachoe (2), mini-ex, botxcat, power washer, water truck, compactor, backhoe.

OSHA Recordable Safety Incidents:	Reported by:	Time:

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Russ Johnson
Field Construction Representative

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME: Third West Sub - Rebuild **DATE :** Wednesday, December 21, 2011

PO & Work Order NO. : 3000078050 / 10035803 **MAIN CONTRACTOR :** Cache Valley Electric

Crew Start Time:	7:00	**Crew Stop Time:**	17:10	**Tot Hrs mns:**	10:10
FCR Start Time:	6:45	**FCR Stop Time:**	17:20	**Tot Hrs mns:**	10:35

Use military time format 00:00

WEATHER CONDITIONS: Partly Cloudy - 25 degrees in AM, 30 degrees In the PM

DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.)

R&R set up four monitors. CVE fab crew stripped fomis from the walls poured yesterday and recovered them with insulating blankets. They also grouted some of the "cone" holes in the transformer pedestal as well as the areas under the metal embeds where some minor honey-comb took place. Nevmian loaded out one truck of concrete/dirt, sent to Clean Harbors. They spent the remainder of the day breaking out concrete and backtilling along the south side of the switchgear wall/footing. We identitied two additional underground walls that do not show on the Demo Plan. Dimensions will be provided as soon as we can determine. CVE fab crew = 6, Newman = 6, R&R = 1, Wilding = 1.

IF WORKING IN ENERGIZED SUBSTATION:

Dispatcher login, name and time:	Ken Barteau 0645
Dispatcher logout, name and time:	Manny LuHaun 1720

DISCREPANCIES:	IMMEDIATE CORRECTIVE ACTION TAKEN:
11/22 - We found two fdns in the old sub that were under the yard rock and not included in the details of concrete to be removed from the site	CVE to provide CO for removing the additonal concrete.
11/16 - No resolution on the 20' ground rod issue.	CVE to provide per unit price to drill concrete.
11/30 - Identified an additional retaining wall that is below grade and does not show on the Demo Plan.	Will excavate to determine dimensions.
12/14 - Communications battery rack extends into the northeast doorway. Capital Electric indicates that they were told to proceed with the install by Barry Andersor	Sent email and pictures to Roger F to confirm that this conflict is acceotable to RMP. Under evaluation by Comm Group
12/15 - Excavated to locate the 46 kV cables exiting the west side of the yard. Dug 8' and didn't find them. Will try aaain. Actual depth will be much deeper than desian of new bank	Sent e-mail to Roger F.

DELAYS OR LOST TIME ENCOUNTERED:

EQUIPMENT (working, delivered, idle):

CVE fab crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex , exclusion zone conex (2), tool trailer, crew truck, boom truck (2). Newman: portable wash-down structure, trachoe (2), mini-ex, bobcat, power washer, water truck, compactor, backhoe.

OSHA Recordable Safety Incidents:	Reported by:	Time:

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Russ Johnson
Field Construction Representative

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME: Third West Sub - Rebuild **DATE :** Thursday, December 22, 2011

PO & Work Order NO. : 3000078050 / 10035803 **MAIN CONTRACTOR :** Cache Valley Electric

Crew Start Time:	7:00	**Crew Stop Time:**	16:45	**Tot Hrs mns:**	9:45
FCR Start Time:	6:50	**FCR Stop Time:**	17:15	**Tot Hrs mns:**	10:25

Use military time format 00:00

WEATHER CONDITIONS: Partly Cloudy - 24 degrees in AM, 32 degrees in the PM

DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.)

R&R set up four monitors. CVE fab crew mobed to a different job today and will not work at Third West next week. This absence will allow Newman to work on the removal of concrete and dirt from the EZ and also to complete the excavation for the switchgear foundation. Newman broke out concrete, including the newly discovered wall running east and west from the control building corner to the north-south wall. Newman loaded out one side-dump tmck today to Clean Harbors. That makes a total of 11 loads of concrete/dirt and 24 loads of dirt that have been shipped to Clean Harbors. CVE = 1, Newman = 6, R&R = 1.

IF WORKING IN ENERGIZED SUBSTATION:

Dispatcher login, name and time:	Gus Montanez 0653
Dispatcher logout, name and time:	Barry Nielson 1715

DISCREPANCIES:	**IMMEDIATE CORRECTIVE ACTION TAKEN:**
11/22 - We found two fdns in the old sub that were under the yard rock and not included in the details of concrete to be removed from the site	CVE to provide CO for removing the additonal concrete.
11/16 - No resolution on the 20' ground rod issue.	CVE to provide per unit price to drill concrete.
11/30 - Identified an additional retaining wall that is below grade and does not show on the Demo Plan.	Will excavate to determine dimensions.
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DELAYS OR LOST TIME ENCOUNTERED:

EQUIPMENT (working, delivered, idle):

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OSHA Recordable Safety Incidents:	**Reported by:**	**Time:**

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Russ Johnson
Field Construction Representative

REI LAB Reservoirs Environmentol, Inc.

December 21, 2011

Laboratory Code:	RES
Subcontract Number:	NA
Laboratory Report:	RES 226406-1
Project # / P.O. #	None Given
Project Description:	3rd West Sub - RMP

David Roskelley
R & R Environmental
47 West 9000 South #2
Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 226406-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr
President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:	RES 226406-1
Client:	R & R Environmental
Client Project Number / P.O.:	None Given
Client Project Description:	3rd West Sub - RMP
Date Samples Received:	December 20, 2011
Analysis Type:	TEM, AHERA
Turnaround:	24 Hour
Date Samples Analyzed:	December 21, 2011

Client ID Number	Lab ID Number	Area Analyzed	Air Volume Sampled	Number of Asbestos Structures Detected	Analytical Sensitivity	Asbestos Concentration	Filter Loading
		(mm^2)	(L)		(s/cc)	(s/cc)	(s/mm^2)
3W-121911-S	EM 839881	0.0800	967	ND	0.0050	BAS	BAS
3W-121911-W	EM 839882	0.1000	95	ND	0.0405	BAS	BAS
3W-121911-N	EM 839883	0.0800	967	ND	0.0050	BAS	BAS
3W-121911-E	EM 839884	0.0800	967	ND	0.0050	BAS	BAS

NA = Not Analyzed
ND = None Detected
BAS = Below Analytical Sensitivity
Average Grid Opening in mm^2 = 0.010

Filter Material = Mixed Cellulose Ester
Filter Diameter = 25 mm
Effective Filter Area = 385 sq mm

DATA QA

Due Date: 12-21-11
Due Time: 1020

Reservoirs Environmental, Inc.

5601 Logan St. Denver, CO 80216 • Ph: 303 964-1986 • Fax 303-477-4276 • Toll Free :866 RESI-ENV
Pager : 303-509-2068

RES 226406

INVOICE TO: (IF DIFFERENT)

Company:	
Address:	

CONTACT INFORMATION.

Company: R&R Environmental	
Address: 47 W 9000S Sandy, Ut. 84070	
Contact: Dave Rokeller	Contact:
Phone:	Phone:
Fax:	Fax:
Cell/pager: 801 541-0035	Cell/pager:
Project Number and/or P.O. #:	
Project Description/Location: 3rd West Sub - RMP	
Final Data Deliverable Email Address: dave@rrenviro.com	

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm

PLM / PCM / TEM ___ RUSH (Same Day) X PRIORITY (Next Day) ___ STANDARD
(Rush PCM = 2hr, TEM = 6hr.)

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm

Metal(s) / Dust ___ RUSH ___ 24 hr. ___ 3-5 Day
RCRA 8 / Metals & Welding Fume Scan / TCLP ___ RUSH ___ 5 day ___ 10 day
Organics ___ 24 hr. ___ 3 day ___ 5 Day

Prior notification is required for RUSH turnarounds.

MICROBIOLOGY LABORATORY HOURS: Weekdays: 8am - 6pm

E.coli O157:H7, Coliforms, S.aureus ___ 24 hr. ___ 2 Day ___ 3-5 Day
Salmonella, Listeria, E.coli, APC, Y & M ___ 48 Hr. ___ 3-5 Day
Mold ___ RUSH ___ 24 Hr ___ 48 Hr ___ 3 Day ___ 5 Day

Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, weekends and holidays.

Special Instructions:

Client sample ID number (Sample ID's must be unique)

REQUESTED ANALYSIS

#	Client sample ID number	PLM - Short report, Long report, Point Count	TEM - AHERA, Level II, 7402, ISO, +/-, Quant, Semi-quant, Micro-vac, ISO-Indirect Preps	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS - Analyte(s) RCRA 8, TCLP, Welding Fume, Metals Scan	ORGANICS - METH	MICROBIOLOGY: Salmonella: +/-	MICROBIOLOGY: E.coli O157:H7: +/-	MICROBIOLOGY: Listeria: +/-	MICROBIOLOGY: Aerobic Plate Count: +/- or Quantification	MICROBIOLOGY: E.coli: +/- or Quantification	MICROBIOLOGY: Coliforms: +/- or Quantification	MICROBIOLOGY: S.aureus: +/- or Quantification	MICROBIOLOGY: Y & M: +/- or Quantification	MICROBIOLOGY: Mold: +/-, Identification, Quantification	SAMPLER'S INITIALS OR OTHER NOTES	Sample Volume (L) / Area	Matrix Code	# Containers	Date Collected mm/dd/yy	Time Collected hh/mm a/p	EM Number (Laboratory Use Only)
1	3W-121911S		X															967	A		12/19/11		539881
2	3W-121911 W		↓															95	↓		↓		82
3	3W-121911 N																	967					83
4	3W-121911 E																	967					84
5																							
6																							
7																							
8																							
9																							
10																							

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Paint = P
Soil = S	Wipe = W
Swab = SW	F = Food
Drinking Water = DW	Waste Water = WW
O = Other	

ASTM E 1792 approved wipe media only

LAB NOTES:

Number of samples received: 4 (Additional samples shall be listed on attached long form.)

NOTE: REI will analyze incoming samples based upon information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall constitute an analytical services agreement with payment terms of NET 30 days, failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By: [signature] FedEx Date/Time: 12/19/11

Laboratory Use Only
Received By: [signature] Date/Time: 12-20-11 1020 Carrier: FedEX

Sample Condition: On Ice Yes / No Sealed Yes / No Intact Yes / No
Temp. (F°) ____

Results:

Contact	Dave	Phone	Email	Fax	Date	12/21	Time	10:50A	Initials	Contact		Phone	Email	Fax	Date	Time	Initials
Contact		Phone	Email	Fax	Date		Time		Initials	Contact		Phone	Email	Fax	Date	Time	Initials

(MSS)

7930 3395 7528

Attachment I

Key to Count Sheets
Count Sheets
Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type	Structure Types
A = Amosite	F = Fiber
An = Anthophyllite	B = Bundle
C = Chrysotile	C = Cluster
Cr = Crocidolite	M = Matrix
T = Tremolite	

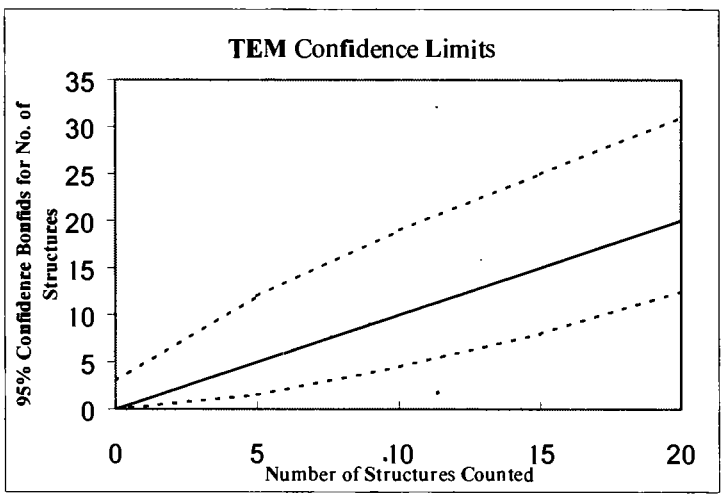
ND = no structures detected
M = other structure associated with a matrix
NAM = Non Asbestos Mineral
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr
Nathan DelHierro
Angela Heitger
Jonathan Bernard
Paul D. LoScalzo
Mark Steiner
Norberto Zimbleman
Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.2a um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R+R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	967
Date received by lab	12/20/11
Lab Job Number:	226406
Lab Sample Number:	839881

Analyzed by	JB
Analysis date	12/21/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	G2-6	ND												
	F2-6	ND			Prep A			70% loading		5% debris				
	E2-6	ND			Prep B			80% loading		5% debris				
	C2-6	ND												
B	K2-3	ND												
	H2-3	ND						JB 12/21/11						
	G2-3	ND												
	F2-3	ND												

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysotile NAM = Non-asbestos material

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R+E
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	15
Date received by lab	12/20/11
Lab Job Number:	222401V
Lab Sample Number:	539882

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	JB
Analysis date	12/21/11
Method (O=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Data Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibols	C	NAM		Sketch	Photo	EDS
A	F2-6	ND												
	F2-3	ND			Pump		A	60% tremolite		5%	debris			
	E2-6	ND			Pump		B ~ A							
	E2-3	ND												
	C2-6	ND						12/21/11						
B	K3-1	ND												
	H3-4	ND												
	H3-1	ND												
	K3-6	ND												
	K3-3	ND												

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysotile NAM = Non-asbestos material

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R+R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	960
Date received by lab	12/20/11
Lab Job Number:	22404
Lab Sample Number:	839583

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	JB
Analysis date	12/21/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	H3-6	ND												
	G3-6	ND												
	F3-6	ND			typ A+B			~70% Chrysotile			3-5% clusters			
	E3-6	ND												
B	H5-4	ND												
	G5-4	ND												
	F5-4	ND												
	E5-4	ND												

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysolite NAM = Non-asbestos material

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R+R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	967
Date received by lab	12/20/11
Lab Job Number:	226902
Lab Sample Number:	539581

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	JB
Analysis date	12/21/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	F3-1	ND												
	E3-1	ND			Rep	A		70% bear front		10-15% debris				
	C3-1	ND			Rep	B		70% bear front		10-15% debris				
	B3-1	ND												
B	C4-4	ND												
	C4-1	ND												
	B4-4	ND												
	B4-1	ND												

12/21/11

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysolite NAM = Non-asbestos material

Analytical Procedures – AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm^2 (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm^2 (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber:	is a structure having a minimum length greater than or equal to 0.5 micron with an aspect ratio of 5:1 or greater with substantially parallel sides.
Bundle:	is a structure composed of three or more fibers in parallel arrangement, with each fiber closer than the diameter of one fiber.
Cluster:	is a structure with fibers in random arrangements such that all fibers are intermixed and no single fiber is isolated from the group.
Matrix:	is a fiber or fibers with one end free and the other end embedded or hidden by a particulate. The exposed fiber end must meet the fiber definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50^{th} structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm^2 clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

$$\text{Area Analyzed, } mm^2 = \#\text{ GO counted} \times \text{Average GO Area (mm)}$$

$$\text{Concentration, s/cc} = \frac{\#\text{ Asbestos Structures}}{\#\text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area } (mm^2)}{\text{Average GO area } (mm^2)} \times \frac{1L}{1000cc}$$

$$\text{Filter loading, s/mm2} = \frac{\#\text{ Asbestos structures}}{\text{Area Analyzed } (mm^2)}$$

GO = TEM grid opening

File: Shared on server T/Offforms.sg/AHERA Procedures
Revised: 02/27/02

Reservoirs Environmentol, Inc.

December 22, 2011

Laboratory Code:	RES
Subcontract Number:	NA
Laboratory Report:	RES 226479-1
Project # / P.O. #	None Given
Project Description:	3rd West Sub - RMP

David Roskelley
R & R Environmental
47 West 9000 South #2
Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 226479-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr
President

P: 303-964-1986
F: 303-477-4275

5801 Logan Street, Suite 100 Denver, CO 80216

1-866-RESI-ENV
www.reilab.com

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

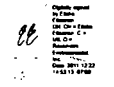
TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:	RES 226479-1
Client:	R & R Environmental
Client Project Number / P.O.:	None Given
Client Project Description:	3rd West Sub - RMP
Date Samples Received:	December 21, 2011
Analysis Type:	TEM, AHERA
Turnaround:	24 Hour
Date Samples Analyzed:	December 22, 2011

Client ID Number	Lab ID Number	Area Analyzed	Air Volume Sampled	Number of Asbestos Structures Detected	Analytical Sensitivity	Asbestos Concentration	Filter Loading
		(mm^2)	(L)		(s/cc)	(s/cc)	(s/mm^2)
3W-122011-S	EM 840393	0.0800	999	ND	0.0048	BAS	BAS
3W-122011-W	EM 840394	0.0800	997	ND	0.0048	BAS	BAS
3W-122011-N	EM 840395	0.0800	995	ND	0.0048	BAS	BAS
3W-122011-E	EM 840396	0.0800	995	ND	0.0048	BAS	BAS

NA = Not Analyzed
ND = None Detected
BAS = Below Analytical Sensitivity
Average Grid Opening in mm^2 = 0.010

Filter Material = Mixed Cellulose Ester
Filter Diameter = 25 mm
Effective Filter Area = 385 sq mm



DATA QA

Due Date: 12-22-11
Due Time: 1020a

RES 226479

REI LAB Reservoirs Environmental, Inc.

5801 Logan St Denver, CO 80216 • Ph: 303 964-1986 • Fax 303-477-4275 • Toll Free :866 RESI-ENV
Pager : 303-589-2068

INVOICE TO: (IF DIFFERENT) CONTACT INFORMATION:

Company: R & R Environmental	Company:	Contact: Dave Roskelley	Contact:
Address: 47 W. 9000 S. Sandy Ut 84070	Address:	Phone:	Phone:
		Fax:	Fax:
		Cell/pager: 801 541-1035	Cell/pager:
Project Number and/or P.O. #:		Final Data Deliverable Email Address: dave@rrenviro.com	
Project Description/Location: 3? West Sub - RMP			

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm
PLM / PCM / TEM ___ RUSH (Same Day) X PRIORITY (Next Day) ___ STANDARD
(Rush PCM = 2hr, TEM = 5hr.)

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm
Metal(s) / Dust ___ RUSH ___ 24 hr. ___ 3-5 Day
RCRA 8 / Metals & Welding Fume Scan / TCLP ___ RUSH ___ 5 day ___ 10 day
Organics ___ 24 hr. ___ 3 day ___ 5 Day
Prior notification is required for RUSH turnarounds.

MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - 6pm
E.coli O157:H7, Coliforms, S.aureus ___ 24 hr. ___ 2 Day ___ 3-5 Day
Salmonella, Listeria, E.coli, APC, Y & M ___ 48 Hr. ___ 3-5 Day
Mold ___ RUSH ___ 24 Hr ___ 48 Hr ___ 3 Day ___ 5 Day

Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, weekends and holidays.

Special Instructions:

REQUESTED ANALYSIS: PLM - Short report, Long report, Point Count; TEM - AHERA, Level II, 7402, ISO, +/-, Quant, Semi-quant, Micro-vac, ISO-Indirect Preps; PCM - 7400A, 7400B, OSHA; DUST - Total, Respirable; METALS - Analyte(s); RCRA 8, TCLP, Welding Fume, Metals Scan; ORGANICS - METH; MICROBIOLOGY: Salmonella: +/-; E.coli O157:H7: +/-; Listeria: +/-; Aerobic Plate Count: +/- or Quantification; E.coli: +/- or Quantification; Coliforms: +/- or Quantification; S.aureus: +/- or Quantification; Y & M: +/- or Quantification; Mold: +/-, Identification, Quantification; SAMPLER'S INITIALS OR OTHER NOTES

VALID MATRIX CODES: Air = A; Bulk = B; Dust = D; Paint = P; Soil = S; Wipe = W; Swab = SW; F = Food; Drinking Water = DW; Waste Water = WW; O = Other
ASTM E1792 approved wipe media only

LAB NOTES:

#	Client sample ID number (Sample ID's must be unique)	PLM	TEM	PCM	DUST	METALS	RCRA 8	ORGANICS	Salmonella	E.coli O157:H7	Listeria	Aerobic Plate Count	E.coli	Coliforms	S.aureus	Y & M	Mold	Sampler's Initials or Other Notes	Sample Volume (L) / Area	Matrix Code	# Containers	Date Collected mm/dd/yy	Time Collected hh/mm a/p	EM Number (Laboratory Use Only)
1	3W-122011 S		X																999	A		12/20/11		540393
2	3W-122011 W		X																997	↓		↓		94
3	3W-122011 N		X																995					95
4	3W-122011 E		X																995	↓		↓		96
5																								
6																								
7																								
8																								
9																								
10																								

Number of samples received: 4 (Additional samples shall be listed on attached long form.)

NOTE: REI will analyze incoming samples based upon information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall constitute an analytical services agreement with payment terms of NET 30 days, failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By: [signature] FedEx	Date/Time: 12/20/11	Sample Condition:	On Ice Yes / No; Sealed Yes / No; Intact (Yes) / No
Laboratory Use Only Received By: [signature]	Date/Time: 12-21-11 1020a Carrier FedEx	Temp. (F°) ____	

Results:								
Contact Dave	(Phone) Email Fax	Date 12/22/11	Time 9:30a	Initials [initials]	Contact	Phone Email Fax	Date	Time	Initials
Contact	Phone Email Fax	Date	Time	Initials	Contact	Phone Email Fax	Date	Time	Initials

7978 6439 4485

Attachment I

Key to Count Sheets
Count Sheets
Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type	Structure Types
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Cr = Crocidolite	M = Matrix
T = Tremolite	

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M = other structure associated with a matrix
NAM = Non Asbestos Mineral
XGB = partly obscured by a grid bar

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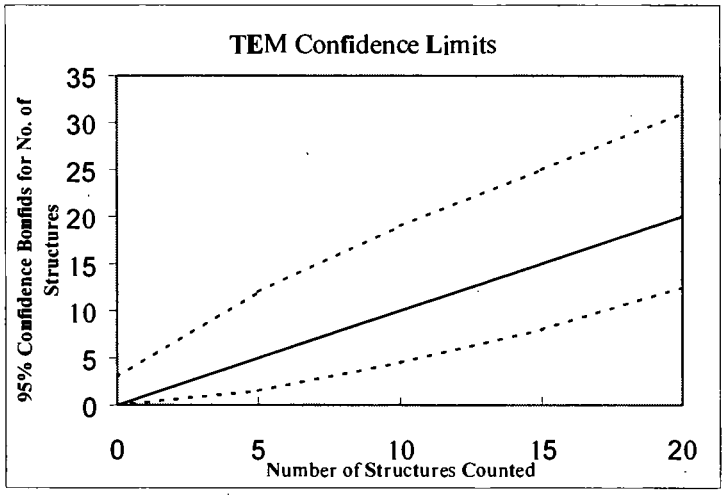
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr
Nathan DelHierro
Angela Heitger
Jonathan Bernard
Paul D. LoScalzo
Mark Steiner
Norberto Zimbleman
Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R+R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	999
Date received by lab	12/21/11
Lab Job Number:	221479
Lab Sample Number:	840393

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	JTB
Analysis date	12/22/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	H4-4	ND												
	G4-4	ND				Prep	A	70% chrst		5% debris				
	G3-3	ND				Prep	B	90% chrst		5% debris				
	F3-3	ND												
	E3-3	ND						NB	12/22/11					
B	F4-3	ND												
	E4-3	ND												
	C4-3	ND												

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysotile NAM = Non-asbestos material

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R&R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	1197
Date received by lab	12/21/11
Lab Job Number:	221479
Lab Sample Number:	84039-4

F-Factor Calculation (Indirect Preps Only):

Fraction of primaly filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	JB
Analysis date	12/22/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	F4-4	ND												
	E4-4	ND				Prep A		90 %			5% debris			
	C4-4	ND				Prep B		70 %			0% debris			
	B4-4	ND												
B	K4-3	ND						JB 12/22/11						
	H4-3	ND												
	G4-3	ND												
	F4-3	ND												

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysotile NAM = Non-asbestos material

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R&R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	995
Date received by lab	12/21/11
Lab Job Number:	226479
Lab Sample Number:	314039-5

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	JB
Analysis date	12/22/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	H3-3	ND												
	G3-3	ND												
	F3-3	ND												
	E3-3	ND			Pup		A+B	~80			5-7% debris			
B	F4-6	ND												
	E4-6	ND						12/22/11						
	C4-6	ND												
	B4-6	ND												

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysotile NAM = Non-asbestos material

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX - N / S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R&R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	4245
Date received by lab	12/21/11
Lab Job Number:	22479
Lab Sample Number:	840396

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	JB
Analysis date	12/22/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	K3-1	ND												
	H3-1	ND			Prep A		60% chrysotile		10-15%		debris			
	G3-1	ND			Prep B		80% chrysotile		10-15%		debris			
	F3-1	ND												
B	F5-4	ND												
	E5-4	ND												
	C5-4	ND												
	C5-3	ND												

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysotile NAM = Non-asbestos material

Analytical Procedures – AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm^2 (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm^2 (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber:	is a structure having a minimum length greater than or equal to 0.5 micron with an aspect ratio of 5:1 or greater with substantially parallel sides.
Bundle:	is a structure composed of three or more fibers in parallel arrangement, with each fiber closer than the diameter of one fiber.
Cluster:	is a structure with fibers in random arrangements such that all fibers are intermixed and no single fiber is isolated from the group.
Matrix:	is a fiber or fibers with one end free and the other end embedded or hidden by a particulate. The exposed fiber end must meet the fiber definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50^{th} structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm^2 clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

$$\text{Area Analyzed, } mm^2 = \#\text{ GO counted} \times \text{Average GO Area (mm)}$$

$$\text{Concentration, s/cc} = \frac{\#\text{ Asbestos Structures}}{\#\text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area } (mm^2)}{\text{Average GO area } (mm^2)} \times \frac{1L}{1000cc}$$

$$\text{Filter loading, s/mm}^2 = \frac{\#\text{ Asbestos structures}}{\text{Area Analyzed } (mm^2)}$$

GO = TEM grid opening

Reservoirs Environmental, Inc.

December 23, 2011

Laboratory Code:	RES
Subcontract Number:	NA
Laboratory Report:	RES 226568-1
Project # / P.O. #	None Given
Project Description:	3rd West Sub-RMP

David Roskelley
R & R Environmental
47 West 9000 South #2
Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 226568-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr
President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:	RES 226568-1
Client:	R & R Environmental
Client Project Number / P.O.:	None Given
Client Project Description:	3rd West Sub-RMP
Date Samples Received:	December 22, 2011
Analysis Type:	TEM, AHERA
Turnaround:	24 Hour
Date Samples Analyzed:	December 23, 2011

Client ID Number	Lab ID Number	Area Analyzed	Air Volume Sampled	Number of Asbestos Structures Detected	Analytical Sensitivity	Asbestos Concentration	Filter Loading
		(mm^2)	(L)		(s/cc)	(s/cc)	(s/mm^2)
3W-122111S	EM 841179	0.0800	955	1	0.0050	0.0050	12.5
3W-122111W	EM 841180	0.0800	955	ND	0.0050	BAS	BAS
3W-122111N	EM 841181	0.0800	954	1	0.0050	0.0050	12.5
3W-122111E	EM 841182	0.0900	948	ND	0.0045	BAS	BAS

NA = Not Analyzed
ND = None Detected
BAS = Below Analytical Sensitivity
Average Grid Opening in mm^2 = 0.010

Filter Material = Mixed Cellulose Ester
Filter Diameter = 25 mm
Effective Filter Area = 385 sq mm

DATA QA

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number: RES 226568-1
Client: R & R Environmental
Client Project Number / P.O.: None Given
Client Project Description: 3rd West Sub-RMP
Date Samples Received: December 22, 2011
Analysis Type: TEM, AHERA
Turnaround: 24 Hour
Date Samples Analyzed: December 23, 2011

Client ID Number	Lab ID Number	Asbestos Mineral	Asbestos Structure Types*				Structures >5 Microns in Length	**Excluded Structures	Asbestos Structures for Concentration
			Fibers	Bundles	Clusters	Matrices			
3W-122111S	EM 841179	Chrysotile	1	0	0	0	0	0	1
3W-122111W	EM 841180	ND	0	0	0	0	0	0	0
3W-122111N	EM 841181	Chrysotile	1	0	0	0	0	0	1
3W-122111E	EM 841182	ND	0	0	0	0	0	0	0

*See Analytical Procedure for definitions
**C = Excluded from total due to lack of confirmation
**L = Excluded from total for length less than 0.5 micron (AHERA only)
**A = Excluded from total due to incorrect aspect ratio
ND = None Detected

RES 226568

Due Date: 12/23/11
Due Time: 11:00 a

Reservoirs Environmental, Inc.

5801 Loom St. Denver, CO 80216 • Ph: 303 894-1986 • Fax 303-477-4275 • Toll Free :866 RESI-ENV
Pager : 303-809-8098

Page 1 of

INVOICE TO: (IF DIFFERENT)

Company: R&R Environmental	Company:
Address: 47 W. 9000S	Address:
Project Number and/or P.O. #:	
Project Description/Location: 3rd West Sub - RMP	

CONTACT INFORMATION:

Contact: Dave Roskelley	Contact:
Phone:	Phone:
Fax:	Fax:
Cell/pager: 801 541-1035	Cell/pager:
Final Data Delivered Email Address: daveR@rrenviro.com	

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm
PLM / PCM / (TEM) ___ RUSH (Same Day) X PRIORITY (Next Day) ___STANDARD
(Rush PCM = 2hr, TEM = 6hr.)

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm
Metal(s) / Dust ___ RUSH ___ 24 hr. ___3-5 Day
RCRA 8 / Metals & Welding Fume Scan / TCLP ___ RUSH ___ 5 day ___10 day
Organics ___ 24 hr. ___ 3 day ___5 Day
Prior notification is required for RUSH turnarounds.

MICROBIOLOGY LABORATORY HOURS: Weekdays: 8am - 6pm
E.coli O157:H7, Coliforms, S.aureus ___ 24 hr. ___2 Day ___3-5 Day
Salmonella, Listeria, E.coli, APC, Y & M ___ 48 Hr. ___3-5 Day
Mold ___ RUSH ___24 Hr ___48 Hr ___3 Day ___5 Day

Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, weekends and holidays.

Special Instructions:

REQUESTED ANALYSIS

Client sample ID number (Sample ID's must be unique)	PLM - Short report, Long report, Point Count	TEM - AHERA, Level II, 7402, ISO, +/-, Quant, Semi-quant, Micro-vac, ISO-Indirect Preps	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	asBETALS - Analyte(s) RCRA 8, TCLP, Welding Fume, Metals Scan	ORGANICS - METH	MICROBIOLOGY: Salmonella: +/-	E.coli O157:H7: +/-	Listeria: +/-	Aerobic Plate Count: +/- or Quantification	E.coli: +/- or Quantification	Coliforms: +/- or Quantification	S.aureus: +/- or Quantification	Y & M: +/- or Quantification	Mold: +/-, Identification, Quantification	SAMPLER'S INITIALS OR OTHER NOTES	Sample Volume (L) / Area	Matrix Code	# Containers	Date Collected mm/dd/yy	Time Collected hh/mm a/p	EM Number (Laboratory Use Only)
1 3W-122111S		X															955	A		12/21/11		841179
2 3W-122111W		↓															955	↓		↓		80
3 3W-122111N																	954					81
4 3W-122111E																	948					82
5																						
6																						
7																						
8																						
9																						
10																						

VALID MATRIX CODES

Air = A	Sulk = B
Dust = D	Paint = P
Soil = S	Wipe = W
Swab = SW	F = Food
Drinking Water = DW	Waste Water = WW
O = Other	

ASTM E1792 approved wipe media only

LAB NOTES:

Number of samples received: 4 (Additional samples shall be listed on attached long form.)

NOTE: REI will analyze incoming samples based upon information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall constitute an analytical services agreement with payment terms of NET 30 days, failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By: [signature] Fed Ex Date/Time: 12/21/11

Sample Condition: On Ice Yes / No Sealed Yes / No Intact Yes / No
Temp. (F°) ____

Laboratory Use Only
Received By: BS Date/Time: 12/22/11 11:00a Carrier: Fed Ex

Results:
Contact Dave Phone Email Fax Date 12/23/11 Time 10:15a Initials ___
Contact ___ Phone Email Fax Date ___ Time ___ Initials ___

Contact	Phone Email Fax	Date	Time	Initials

BS 0798 7978 7686 1480
12/22/11

7-2011_version 1

Attachment I

Key to Count Sheets
Count Sheets
Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type	Structure Types
A = Amosite	F = Fiber
An = Anthophyllite	B = Bundle
C = Chrysotile	C = Cluster
Cr = Crocidolite	M = Matrix
T = Tremolite	

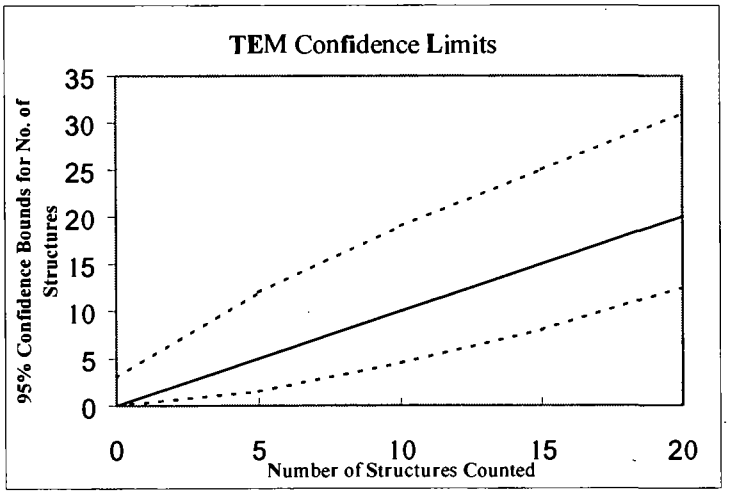
ND = no structures detected
M = other structure associated with a matrix
NAM = Non Asbestos Mineral
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr
Nathan DelHierro
Angela Heitger
Jonathan Bernard
Paul D. LoScalzo
Mark Steiner
Norberto Zimbleman
Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	20KX 11KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R&K
Samole Type fA=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	955
Date received by lab	12/22/11
Lab Job Number:	27656
Lab Sample Number:	54179

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	JB
Analysis date	12/23/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Lenoth	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	H5-6	ND												
	G5-6	ND					Prep A	70% in fact		10%	debris			
	F5-6	ND					Prep B	60% in fact		10%	debris			
	E5-6	ND												
B	G6-4	ND												
	F6-4	ND												
	E6-4	F		1	2	1	CD		✓		1			
	C6-4	ND												
							JB 12/23/11							

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysotile NAM = Non-asbestos material

Reservoirs Environmental, Inc.

TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R&K
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	755
Date received by lab	12/22/11
Lab Job Number:	2716568
Lab Sample Number:	541-80

Analyzed by	JB
Analysis date	12/23/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	K4-3	ND												
	H4-3	ND			Prep A		70% loading			5-7% debris				
	G4-3	ND			Prep B		60% loading			5-7% debris				
	F4-3	ND												
B	G5-6	ND												
	F5-6	ND						12/23/11						
	E5-6	ND												
	C5-6	ND												

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysotile NAM = Non-asbestos material

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.2S um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R&K
Samole Tyoe (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	957
Date received by lab	12/22/11
Lab Job Number:	276568
Lab Sample Numben	5411 81

F-Factor Calculation (Indirect Preps Only):

Fractkm of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary tilter (ml)	

Analyzed by	JB
Analysis date	12/23/11
Method (D=Direct, I=IndirecL IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage locaticn	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	G5-6	ND												
	F5-6	ND			Prep A			70% intact			3-5% debris			
	E5-6	ND			Prep B			80% intact			3-5% debris			
	C5-6	ND												
B	H5-4	ND												
	G5-4	ND												
	F5-4	F		1	2	1	CD		✓		/			
	E5-4	ND												
								[signature] 12/23/11						

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysotile NAM = Non-asbestos material

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R&K
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	948
Date received by lab	12/22/11
Lab Job Number	271568
Lab Sample Number	541182

Analyzed by	JB
Analysis date	12/23/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	H4-6	ND												
	G4-6	ND			Prep A		80% intact			10% debris				
	F4-6	ND			Prep B		60% intact			10% debris				
	E4-6	ND												
B	H5-4	ND						JB 12/23/11						
	G5-4	ND												
	F5-4	ND												
	F4-4	ND												
	E4-4	ND												

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysotile NAM = Non-asbestos material

Analytical Procedures – AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm^2 (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm^2 (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber:	is a structure having a minimum length greater than or equal to 0.5 micron with an aspect ratio of 5:1 or greater with substantially parallel sides.
Bundle:	is a structure composed of three or more fibers in parallel arrangement, with each fiber closer than the diameter of one fiber.
Cluster:	is a structure with fibers in random arrangements such that all fibers are intermixed and no single fiber is isolated from the group.
Matrix:	is a fiber or fibers with one end free and the other end embedded or hidden by a particulate. The exposed fiber end must meet the fiber definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50^{th} structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm^2 clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

$$\text{Area Analyzed, } mm^2 = \#\text{ GO counted} \times \text{Average GO Area (mm)}$$

$$\text{Concentration, s/cc} = \frac{\#\text{ Asbestos Structures}}{\#\text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area } (mm^2)}{\text{Average GO area } (mm^2)} \times \frac{1\text{L}}{1000\text{cc}}$$

$$\text{Filter loading, s/mm}^2 = \frac{\#\text{ Asbestos structures}}{\text{Area Analyzed } (mm^2)}$$

GO = TEM grid opening

File: Shared on server T/Offforms.sg/AHERA Procedures
Revised: 02/27/02

Reservoirs Environmentol, Inc.

December 26, 2011

Laboratory Code:	RES
Subcontract Number:	NA
Laboratory Report:	RES 226620-1
Project # / P.O. #	None Given
Project Description:	None Given

David Roskelley
R & R Environmental
47 West 9000 South #2
Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 226620-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr
President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:	RES 226620-1
Client:	R & R Environmental
Client Project Number / P.O.:	None Given
Client Project Description:	None Given
Date Samples Received:	December 23, 2011
Analysis Type:	TEM, AHERA
Turnaround:	24 Hour
Date Samples Analyzed:	December 24, 2011

Client ID Number	Lab ID Number	Area Analyzed	Air Volume Sampled	Number of Asbestos Structures Detected	Analytical Sensitivity	Asbestos Concentration	Filter Loading
		(mm^2)	(L)		(s/cc)	(s/cc)	(s/mm^2)
3W-122211-S	EM 841575	0.0900	982	ND	0.0044	BAS	BAS
3W-122211-W	EM 841576	0.0900	982	ND	0.0044	BAS	BAS
3W-122211-N	EM 841577	0.1000	982	ND	0.0039	BAS	BAS
3W-122211-E	EM 841578	0.0900	982	ND	0.0044	BAS	BAS

NA = Not Analyzed
ND = None Detected
BAS = Below Analytical Sensitivity
Average Grid Opening in mm^2 = 0.010

Filter Material = Mixed Cellulose Ester
Filter Diameter = 25 mm
Effective Filter Area = 385 sq mm

DATA QA

Due Date: 12·24·11
Due Time: 11Or

RES 226620

Reservoirs Environmental, Inc.

5801 Logan St Denver, CO 80216 • Ph: 303 964-1986 • Fax 303-477-4275 • Toll Free: 866 RESI-ENV
Pager: 303-509-2086

Company: R&R Environmental	Company:	Contact: Dave Roskelley	Contact:
Address: 47 W 9000 S	Address:	Phone:	Phone:
Sandy Ut 84043		Fax:	Fax:
		Cell/pager: 801 541-1035	Cell/pager:
Project Number and/or P.O. #:		Final Data Deliverable Email Address: dave@rrenviro.com	
Project Description/Location:			

INVOICE TO: (IF DIFFERENT) — CONTACT INFORMATION:

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm
PLM / PCM / TEM ___ RUSH (Same Day) X PRIORITY (Next Day) ___ STANDARD
(Rush PCM = 2hr, TEM = 6hr.)

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm
Metal(s) / Dust ___ RUSH ___ 24 hr. ___ 3-5 Day
RCRA 8 / Metals & Welding Fume Scan / TCLP ___ RUSH ___ 5 day ___ 10 day
Organics ___ 24 hr. ___ 3 day ___ 5 Day
Prior notification is required for RUSH turnarounds.

MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - 6pm
E.coli O157:H7, Coliforms, S.aureus ___ 24 hr. ___ 2 Day ___ 3-5 Day
Salmonella, Listeria, E.coli, APC, Y & M ___ 48 Hr. ___ 3-5 Day
Mold ___ RUSH ___ 24 Hr ___ 48 Hr ___ 3 Day ___ 5 Day

Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, weekends and holidays.

Special Instructions:

REQUESTED ANALYSIS: PLM - Short report, Long report, Point Count; TEM - AHERA, Level II, 7402, ISO, +/-, Quant, Semi-quant, Micro-vac, ISO-Indirect Preps; PCM - 7400A, 7400B, OSHA; DUST - Total, Respirable; METALS - Analyte(s), RCRA 8, TCLP, Welding Fume, Metals Scan; ORGANICS - METH; MICROBIOLOGY: Salmonella +/-, E.coli O157:H7 +/-, Listeria +/-, Aerobic Plate Count +/- or Quantification, E.coli +/- or Quantification, Coliforms +/- or Quantification, S.aureus +/- or Quantification, Y & M +/- or Quantification, Mold +/-, Identification, Quantification; SAMPLER'S INITIALS OR OTHER NOTES

VALID MATRIX CODES: Air = A, Bulk = B, Dust = D, Paint = P, Soil = S, Wipe = W, Swab = SW, F = Food, Drinking Water = DW, Waste Water = WW, O = Other. **ASTM E1792 approved wipe media only**

LAB NOTES: 12-22-11

#	Client sample ID number (Sample ID's must be unique)	TEM	Sample Volume (L) / Area	Matrix Code	# Containers	Date Collected mm/dd/yy	Time Collected hh/mm a/p	EM Number (Laboratory Use Only)
1	3W-122211S	X	982	A		12/22/11		841575
2	3W-122211 W	↓	↓	↓		↓		76
3	3W-122211 N	↓	↓	↓		↓		77
4	3W-122211 E	↓	↓	↓		↓		78
5								
6								
7								
8								
9								
10								

Number of samples received: 4 (Additional samples shall be listed on attached long form.)

NOTE: REI will analyze incoming samples based upon information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall constitute an analytical services agreement with payment terms of NET 30 days, failure to comply with payment terms may result in a 1.3% monthly interest surcharge.

Relinquished By: [signature] FedEx Date/Time: 12/22/11
Laboratory Use Only Received By: [signature] Date/Time: 12·23·11 11Or Carrier: FedEx
Sample Condition: On Ice Yes / No; Sealed Yes / No; Intact (Yes) No; Temp. (F°) ____

Results:
Contact ___ Phone Email Fax Date ___ Time ___ Initials ___ | Contact ___ Phone Email Fax Date 12-22-11 Time 9:?? Initials [initials]
Contact Dave R. Phone Email Fax Date 12.24.11 Time 4:45P Initials JY | Contact ___ Phone Email Fax Date ___ Time ___ Initials ___

7930 4642 8561

Attachment I

Key to Count Sheets
Count Sheets
Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type	Structure Types
A = Amosite	F = Fiber
An = Anthophyllite	B = Bundle
C = Chrysotile	C = Cluster
Cr = Crocidolite	M = Matrix
T = Tremolite	

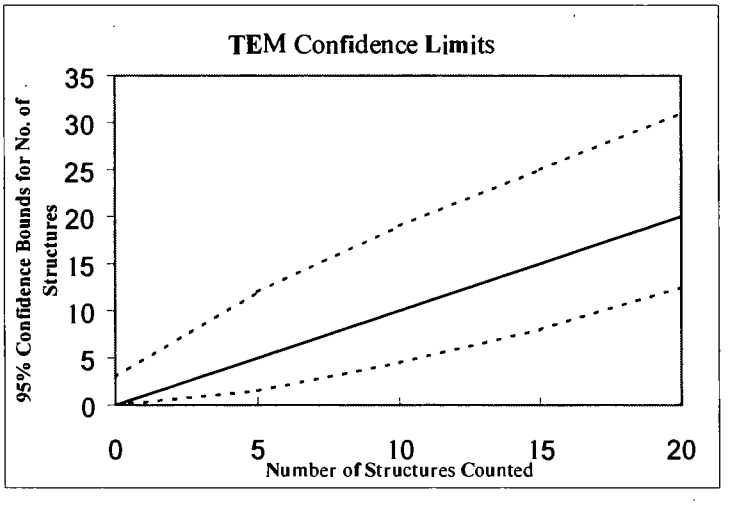
ND = no structures detected
M = other structure associated with a matrix
NAM = Non Asbestos Mineral
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr
Nathan DelHierro
Angela Heitger
Jonathan Bernard
Paul D. LoScalzo
Mark Steiner
Norberto Zimbleman
Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoire Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	Reservoirs Environmental,Inc.
Instrument	JEOL 100 CX N
Volfaaa (KV)	100 KV
Magnification	20KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.29 um
Scale: 1D =	0.058 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	N/A
QA Type	Not QA

Client:	R & R Environmental
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	982
Data received by lab	12/24/2011
	226620
Lab Sample Number:	841575

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	n.zimbelman
Analysis date	12/24/2011
Method (D=Direct, I=Indirect, IA=Indirect, astrd)	D
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Client Sample ID Number: 3W-122211 S

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EOS
A	F2-6	ND												
	G2-4	ND												
	G3-4	ND												
	G3-6	ND			A:	70%	INT-	3-5	(fibers)					
B	G3-4	ND												
	H3-4	ND												
	G3-6	ND			1D:	90%	INT-	3-5	(fibers)					
	E4-4	ND												
	G4-1	ND												

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysotile NAM = Non-asbestos material

ND

Ressrvotre Envlronmentaf, Inc.
TEM Asbestos Structure Count

Laboratory name:	Reservoirs Environmental,Inc.
Instrument	JEOL 100 CX N
Voltage (KV)	too KV
Magnification	20KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.29 um
Scale: 1D =	0.058 um
Primaiy filter area (mm2)	385
Secondary Filter Area (mm2)	N/A
QA Type	Not QA

Client:	R & R Environmental
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	982
Date received by lab	12/24/2011
	226620
Lab Sample Numben	841576

F-Factor Calculation (indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (m0	

Analyzed by	n.zimbelman
Analysis date	12/24/2011
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counoig rules (ISO, AHERA, ASTM)	Ahera
Grid storaoe location	Month Analyzed
Scope Alignment	Date Analyzed

Client Sample (D Number: 3W-122211 W

Grid	Grid Opening	Stucture Type	No. of Stmctures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Lenath	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	H3-6	ND												
	F6-6	ND												
					A:	3-5	ND fibers							
B	G5-1	ND												
	G4.6	ND												
	H4.6	ND												
	K3-3	ND												
	H3-6	ND												
	H4.1	ND												
	G4.1	ND			B:	~	A							

LA = Libby-type amphibole OA = Other (non-Libby type) amphibole C = Chrysotile NAM = Non-esbestos material

NAD

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	Reservoirs Environmental,Inc.
Instrument	JEOL 100 CX N
Voltage (KV)	100 KV
Magnification	20KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.29 um
Scale: 1D =	0.058 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	N/A
QA Type	Not QA

Client:	R & R Environmental
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	982
Date received by lab	12/24/2011
	226620
Lab Sample Number:	**841577**

Analyzed by	n.zimbelman
Analyse date	12/24/2011
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	**Ahera**
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Client Sample ID Number: 3W-122211 N

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EOS
A	B4-4	ND												
	B4-6	ND												
	A3-4	ND												
	E4-1	ND												
	B5-4	ND												
	B5-6	ND			A: [illegible]									
B	E5-6	ND												
	E4-4	ND												
	F4-4	ND												
	F3-6	ND			B	~	A							

LA = Libby-type amphibole   OA = Other (non-Libby type) amphibole   C = Chrysotile   NAM = Non-asbestos material

NBX

C:\Users\TEM.REI-LAB\Desktop\TEM Count Shee rev.1-11 (version 1).xlsx

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	Reservoirs Environmental,Inc.
Instmment	JEOL 100 CX N
Voltane (KV)	100 KV
Magnification	20KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.29 um
Scale: 1D =	0.056 um
Primaiy filter area (mm2)	385
Secondary Filter Area (mm2)	N/A
QA Type	Not QA

Client:	R & R Environmental
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	982
Date received by lab	12/24/2011
	226620
Lab Sample Number	841578

F-Factor Calculalion (Indirect Preps Only):

Fraction of primary filer used	
Total Resuspension Volume (ml)	
Volume Applied to secondary titler (ml)	

Analyzed by	n.zimbelman
Analysis date	12/24/2011
Method (D=Direct, I=Indiect, IA=Indirect, ashed)	D
Counting mles (ISO, AHERA, ASTM)	**Ahera**
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Client Sample ID Number: 3W-122211 E

Grid	Grid Opening	Stmcture Type	No. of Stmctures		Dimensions		Identification	Mineral Class			Sketch/Comments	1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole	C	NAM		Sketch	Photo	EDS
A	E3-3	ND												
	B3-6	ND												
	B4-4	ND												
	B4-6	ND												
	B4-3	ND												
	B5-1	ND			A:	55.	[illegible]	3-5 % [illegible]						
B	B4-6	ND												
	B4-4	ND												
	E4-4	ND			B	~	A							

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Cluster:	is a structure with fibers in random arrangements such that all fibers are intermixed and no single fiber is isolated from the group.
Matrix:	is a fiber or fibers with one end free and the other end embedded or hidden by a particulate. The exposed fiber end must meet the fiber definition given above.

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$$\text{Concentration, s/cc} = \frac{\#\text{ Asbestos Structures}}{\#\text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area } (mm^2)}{\text{Average GO area } (mm^2)} \times \frac{1L}{1000cc}$$

$$\text{Filter loading, s/mm2} = \frac{\#\text{ Asbestos structures}}{\text{Area Analyzed } (mm^2)}$$

GO = TEM grid opening

File: Shared on server T/Offforms.sg/AHERA Procedures
Revised: 02/27/02